



WATER-RIGHT DOCKET

Chickasaw National Recreation Area

Docket No: 6

BROMIDE SPRING

Preliminary Docket Information

00-00-0000: dockets

August 15, 1995

L54(479)

Memorandum

To: Files

From: Owen Williams, Chief, Water Rights Branch *OW*

Subject: Dockets

This is one of three springs in the "Bromide group" as defined by Charles N. Gould in 1905. The springs are named:

Bromide	Docket	06
Cliff Bromide Springs		07 (AKA Medicine Springs)
Unnamed Spring		19

Where it is available, water quality data are included in the CHIC springs dockets. This is done here because of the original purposes for which the park was established. Water quality data would not normally be a part of a docket, but CHIC's springs were viewed as medicinal at the time of the park's establishment. This reason, among others, necessitated the protection and preservation of CHIC springs.

The State of Oklahoma has been informed of the U.S.'s claim to the springs but no quantification of a right under the reservation doctrine, or any other doctrine, has been made.

WATER DOCKET INFORMATION

AREA CHICKASAW

DOCKET NO. 86

APPLICATION NO.

STATE RIPARIAN NO.

CERTIFICATE NO.

TITLE OF DOCKET BROMIDE SPRINGS

PRIORITY

REMARKS :

NATIONAL PARK SERVICE
WATER RIGHTS DATA SHEETOrganization
Code 7 5 1 0Docket
Classification F 1 A
Federal Reserved AlienDocket
Number 0 6

Source Number 0 6 of 4 0

Card #1 1A 1C
Add Change

Site 2 R O M I D E S P R I N G S
Location 1 Township/Range --- T 1 S R 3 E Sec 0 3 A B C D of A B C D of A B C D
2 Lat/Long --- Latitude 3 4 2 9 4 8 S Longitude 0 9 6 5 8 5 9
3 Other ---

Card #2 2A 2C
Add ChangeSequence
Number State 4 0 County M U R R A YAcquired by 1 2 3 4 5
Purchase Appropriation Riparian Reservation Other
(Explain in Remarks)Application
NumberCancellation
Date year month dayPermit
NumberCancellation
Date year month dayCertificate
NumberCancellation
Date year month day

Card #7	7A	7C
	Add	Change

NATIONAL PARK SERVICE
WATER RIGHTS DATA SHEETOrganization
Code 7 5 1 0Docket
Classification F R A
Federal Reserved AlienDocket
Number 4 6

Source Number 2 6 of 4 0

Card #2 1C
Add Change

Site 2 R O M I D E S P R I N G

Location 1 Township/Range --- T R Sec A B C D of A B C D of A B C D
2 Lat/Long --- Latitude 3 4 2 9 4 8 N S Longitude 0 9 6 5 8 5 9
3 Other ---

Card #2 2A 2C
Add ChangeSequence
Number State 4 0 County M O R R A YAcquired by 1 2 3 4 5
Purchase Appropriation Riparian Reservation Other
(Explain in Remarks)Application
NumberCancellation
Date year month dayPermit
NumberCancellation
Date year month dayCertificate
NumberCancellation
Date year month day

Card #3 ☒ 3A ☐ 3C
Add ChangeStatus ☐ A ☐ I
Active InactiveWater System ☐ P ☐ S
Primary SecondaryType of Source ☐ L ☐ R ☒ S ☐ W
Lake River Spring WellLegal Source ☒ S ☐ G
Surface Water Ground WaterPriority ☐ ☐ ☐ ☐ ☐ ☐
year month dayQuantity Vested ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐1 2 3 4
cub.ft. gal acre ft. miner's in.per 1 2 3 4 5
sec min day month yearQuantity Used ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐1 2 3 4
cub.ft. gal acre ft. miner's in.per 1 2 3 4 5
sec min day month yearUse of Water ☐ ☐ ☐ ☐
Primary Secondary(00) None
(01) Wildlife
(02) Stockwater
(03) Irrigation(05) Campground
(06) Domestic
(07) Public Supply
(08) Municipal(09) Recreation
(10) Mining
(11) Power
(12) Fire Protection

(13) Other

Reservation Date 9 0 2 0 7 0 1
year month dayDate of Adjudication ☐ ☐ ☐ ☐ ☐ ☐
year month day

Hydrologic Unit Number 1 1 1 5 0 3 0 3

Card #4 ☒ 4A ☐ 4C
Add Change

Remarks L O C A T E D A T T H E B A S E O F A C O N G L O M E R

A T E C L I F F S O U T H O F R O C K C R E E K , N E

Card #5 ☒ 5A ☐ 5C
Add Change

A P T H E W E S T E N D O F T H E P A R K , A M I L

E S O U T H W E S T O F P A V I L I O N S P R I N G S .

Card #6 ☒ 6A ☐ 6C
Add Change

T H E A P P R O X I M A T E F L O W I S 1 G A L L O N P

E R M I N U T E A N D T H E W A T E R C O A T B I M S

Card #7 ☒ 7A ☐ 7C
Add Change

B R O M I D E . T H E W A T E R I S C O L L E C T E D I N

A C E M E N T B A S I N ,

*Complete letter
in CHIC - 30*

L54(SWR-000)

MAY 27 1983

Mr. James R. Barnett
Executive Director
Oklahoma Water Resources Board
P.O. Box 53585
Oklahoma City, Oklahoma 73152

Dear Mr. Barnett:

Following the National Park Service's "Declaration of Water Rights" to all springs and wells (see Enclosure A for individual listing), at Chickasaw National Recreation Area dated May 9, 1983, enclosed you will find the following additional information:

1. Excerpts of correspondence, office memoranda, etc., dated from the early 1900's generally describing the development of selected springs within the Sulphur Springs Reservation (formerly Platt National Park).
2. Photographs showing visitor use of selected springs through the years.

In addition to the above declarations, the National Park Service obtains water from the following water sources for municipal purposes.

1. City of Sulphur, Oklahoma.
2. Rural Water District No. 1.
3. NPS Water Treatment Plant.

Municipal water purchased from the City of Sulphur and the Rural Water District No. 1 from 1976 to 1982 is as follows:

<u>Year</u>	<u>City of Sulphur</u>	<u>RWD No. 1</u>
1976	1.431	.003
1977	2.199	.021
1978	4.383	.032
1979	3.237	.133
1980	1.035	.060
1981	1.639	.015
1982	1.195	3.037

The above material values are in million of gallons per year.

Supplemental mineral water is obtained from the overflow of an artesian well (Caylor Well), which is located on non-National Park Service property within Sulphur, Oklahoma. The water has been flowing into park land since 1937, as nearly as we are able to determine at this time. A formal agreement reflecting the above verbal agreement, which has been in effect since 1937(?), was entered on June 3, 1961. The initial flow to the park from Caylor Well is estimated at 15 to 20 gallons per minute.

Visitation figures to the area (see Enclosure 3), compiled by the staff of Chickasaw National Recreation Area from 1907 to 1982 are also enclosed. As you will note, visitation to the area shows an increasing trend from 106,332 in 1908 to 2,094,319 in 1982. Visitation has increased in part because of the increasing size of the park and construction or replacement of physical facilities, plus the discovery of the recreational and aesthetic benefits of the area by first time visitors to the area.

Additional information is available, should you and the board request it. The information may take some time to secure as it is stored in Dallas, Texas. Obtaining additional information may require as much as two months work and attendant costs estimated at \$10,000.

Sincerely,

/s/ JACK NECKELS

Associate Regional Director,
Park Operations, SWR

Enclosures 3

bcc:

Field Solicitor, Santa Fe
Superintendent, Chickasaw
Chief, WASO/497

Solicitor, Regional Office, P.O. Box 3156, Tulsa, Oklahoma 74101 (Attn: E. King)
(each w/o enclosures)

GMoore:og:5/26:83

Enclosure A

LISTING OF DECLARATION OF WATER RIGHTS

1. Antelope Springs
2. Buffalo Springs
3. Cunningham Spring
4. Base Spring
5. Big Tom Springs
6. Arsenic Spring
7. Little Tom Springs
8. Swords' Spring
9. Townsley's Spring
10. Dog Springs
11. Unnamed Spring
12. Hillside Spring
13. Beach Springs
14. Beach Springs
15. Beach Springs
16. Sand Springs
17. Bromide Spring
18. Cliff Bromide Spring
19. Unnamed Spring
20. Black Sulphur Spring
21. Sulphur Spring
22. Tuff's Spring
23. Iron Spring
24. Soda Spring
25. Sulphur Springs
26. Sulphur Springs
27. Wilson Spring
28. Churchill Spring
29. Rucker's Spring
30. Iron Spring
31. Jericho Spring
32. Unnamed Springs
33. Vendome Well
- Observation Well No. 1
- Observation Well No. 2

UG4(SWR-OM)

May 9, 1983

Mr. James R. Barnett
Executive Director
Oklahoma Water Resources Board
P.O. Box 53565
Oklahoma City, Oklahoma 73152

Dear Mr. Barnett:

In accordance with an agreement reached during a meeting between members of our respective staffs on April 21, 1983, the National Park Service declares a water claim to all waters issuing from a total of 33 springs which were identified by Dr. Charles H. Gould, Professor of Geology at the University of Oklahoma, in 1906. In addition, the National Park Service declares its claims to water which issue from the Vandover Well, a free flowing artesian well.

Within 2 weeks, the National Park Service will submit under separate cover, two packages consisting of photographs and excerpts of correspondence dating back to the turn of the century, concerning these claims.

Sincerely,

/s/ Robert L. Kerr

Regional Director,
Southwest Region

Separate Cover

cc:

Field Solicitor, Santa Fe)

Superintendent, Chickasaw) each w/copy of enclosure

Chief, WASO/497)

Mr. K. King, Solicitor, Regional Office, P.O. Box 3156, Tulsa, OK 74101 w/enc.

G Moore:edr:5/9/83

OM

DECLARATION OF OWNERSHIP OF WATER RIGHTS

Page 1 of 2

No. 17 Bromide Spring-Sulphur Artesian Basin
Basin Name

Declaration No. _____ Date received _____

1. Name of Declarant United States of America through National Park Service

Mailing Address Chickasaw National Recreation Area, Box 201, Sulphur, OK 73086

County of Murray State of Oklahoma

2. Source of water supply Simpson/Arbuckle Group *(See 8A)
(artesian or shallow water aquifer)

3. Describe well location under one of the subheadings:

a. SE 1/4 NW 1/4 of Sec. 3 Twp. 15 Rge. 3E 1PM in
Murray County.

b. Tract No. _____ of Map No. _____ of the _____.

On land owned by the United States of America

4. Description of well: date drilled _____ driller _____ depth _____ feet.
outside diameter of casing _____ inches; original capacity _____ gal. per min.; present
capacity _____ gal. per min.; pumping lift _____ feet; static water level _____ feet (above)
(below) land surface; make and type of pump _____
Make, type, horsepower, etc., of power plant _____
Fractional or percentage interest claimed in well _____

5. Quantity of water appropriated and beneficially used 1 gallon per minute *(See 8B)
_____ (acre feet per acre)
Historical and current uses: public drinking water, live-
for stock watering, education, recreation, fish purposes,
(acre feet per annum) and wildlife including support of existing natural
riparian ecosystem.

6. Description of spring: Developed or Undeveloped (Circle One)

Date Developed: prior to 05-17-1906 by UNKNOWN

7. Water was first applied to beneficial use prior to 05 17 1906
month day year

and since that time has been used fully and continuously for the above described

purpose in Number 5.

8. Additional statements or explanations A) Classified as one of three springs of the
"Bromide Springs Group" by Dr. Charles N. Gould, Geologist, in "Report of Springs" -
August 13, 1906. B) Approximate flow determined by Dr. Charles N. Gould in 1905.
C) See Attached.

I, Robert J. Smith being first duly sworn upon my oath, depose
and say that the above is a full and complete statement submitted in evidence of
ownership of a valid water right, that I have carefully read each and all of the items
contained therein and that the same are true to the best of my knowledge and belief.

Robert J. Smith declarant
by _____

Subscribed and sworn to before me this 9th day of May, A.D., 1983
My Commission expires February 21, 1987 Burt S. Whitman Notary Public

8. . This Declaration is provided pursuant to the policy of the Secretary of the Interior to recognize and grant deference to state laws, regulations and procedures where those secure water rights and uses of the United States. This Declaration is given as a matter of comity, cooperation and information. It does not consent to the jurisdiction of the State in regards to judicial or other adjudications, the rights of the United States to the use or amount of water, or the amount described in this Declaration. This Declaration cannot affect vested rights under Federal or State law.

These Declarations concerning ownership of or flows of springs - developed and undeveloped - and wells should be taken and considered in totality as part of the entire Chickasaw National Recreation Area.



UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
REGIONAL OFFICE, SOUTHWEST REGION
P.O. BOX 3156
TULSA, OKLAHOMA 74101

APR 27 1983
April 22, 1983

Mr. James R. Barnett
Executive Director
Oklahoma Water Resources Board
P. O. Box 53585
Oklahoma City, Oklahoma 73152

Re: Determination of Prior Vested Ground Water Rights, Murray County

Dear Mr. Barnett:

In accordance with the conclusions reached during the discussion on April 21, among members of your staff, employees of the National Park Service, and me in the Office of the Chief, Division of Stream Water, concerning the determination of prior vested ground water rights in Murray County as they affect the Chickasaw National Recreation Area, additional time is hereby requested to May 9, 1983, within which National Park Service will submit evidence and information to supplement the record on behalf of historical uses by the National Recreation Area and its predecessor National Park.

It was agreed during our discussion that, subject to your approval of this request for additional time, supplemental information and evidence will be provided to O.W.R.B. by May 9 in order to allow timely completion of the ongoing determination process.

Sincerely yours,

Kathleen King
Department Counsel
National Park Service

cc: Office of the General Counsel, OWRB, Attention: Glen Hammonds

bcc: Regional Director, NPS, Attn: Gary Moore, Hydrological Engineer
Field Solicitor, Santa Fe, Attn: John Harrington

Churchill	SW NE	Unlevel	5 gpm	7-1-02
Spring	E/	Spr.		
Puckers	SW NE	Unlevel	3 gpm	7-1-02
Spring	E/	Spr.		
Iron	SW NE	Unlevel	4.65 gpm	7-1-02
Spring	E/	Spr.		
Jericho	SW NE	Unlevel	3 gpm	7-1-02
Spr.	E/	Spr.		
Unlevel	SW NE	Unlevel	4.25 gpm	7-1-02
Springs (2)	E/	Spr.		

Land History

September 11, 1995

L54(479)

Memorandum

To: Files

From: Owen Williams, Chief, Water Rights Branch

Subject: Land Status Information - CHIC Dockets

Information concerning land status for CHIC is contained in the file folder labeled CHIC Deeds rather than in individual dockets.

Other Supporting Information

Bromide Springs

WATER SYSTEM DATA

Area Platt National Park Recorded by C. T. Othmer Date 8/21/72
Mo. Da. Yr.

1. Name of System: Mineral Water Systems

2. Location: State Oklahoma County Murray General Area Sulphur

3. General Description: This system includes all springs and artesian flows that are set
(Type of System, Use, Sources, Capacity, etc.)
up by the Park to allow visitors to take water home with them.

4. Water Rights: Type of Right domestic Claim No. none
(Riparian, Appropriative, Absolute, etc.)
Permit No. none Docket No. none Remarks: see legal addendum and
maintenance cost memorandum
(e.g. see addendum)

5. Sources of Supply: No./Type of Sources Bromide, Medicine, and Black Sulphur Springs,
Jack Diamond well
(Use Addendums for Source Data)

6. Storage: No. of Storage Sites 2 (#1 Medicine Springs water #2 Bromide Springs water)

*Storage Data #1: Location: Latitude 34° 29' 48" Longitude 96° 58' 59"
(Deg. Min. Sec.) (Deg. Min. Sec.)
Other Location Descriptions: _____

Type Storage Elevated
(Pneumatic, Elevated, Underground, Ground Level, etc.)
Pressure Setting NA Type Construction Concrete tank
(If Pneumatic)
Capacity 280 ft³ gal. Inlet Size 1 in. Outlet Size 1 in.
Remarks: _____

*Storage Data #2: Location: Latitude 34° 29' 48" Longitude 96° 58' 59"
(Deg. Min. Sec.) (Deg. Min. Sec.)
Other Location Descriptions: _____

Type Storage Elevated
(Pneumatic, Elevated, Underground, Ground Level, etc.)
Pressure Setting NA Type Construction Concrete tank
(If Pneumatic)
Capacity 280 ft³ gal. Inlet Size 1 in. Outlet Size 1 in.
Remarks: _____

7. Distribution: Residences _____ Trailers _____
Drinking Fountains X Fire Hydrants _____ Other _____

8. Black Sulphur Springs Longitude 96° 58' 18" W Latitude 34° 30' 18" N
Pumphouse for Medicine Springs and Bromide Springs Longitude 96° 59' 00" W
Latitude 34° 29' 77" N
Bromide Pavillion (outlet for Medicine water, Bromide water and sulphur water from
the Jack Diamond well) Longitude 96° 58' 59" W Latitude 34° 29' 48" N.

ADDENDUM FOR SOURCE DATA

Source No./Names Bronide Springs

Power Source Electric Motor: Make Dayton HP 1/3
(Electric, Gas, Generator)

RPM 1725 Type K Phase 1 HZ 60
Cycles

Pump Housing: Type Const. Concrete Block Concrete Slab Size 6 x 8-1/2 x 6
(Walls) (Roof) (W x L x H)

(Pump house shared w/
Medicine Springs pump)

Control: Automatic
(Float, Electrode, Pressure, Time, etc.)

Manual X (usually pump is used once daily to fill tank)

Other _____
(Explain)

Motor Serial No. 62059KV63

History: Driller or Construction Co. _____ (Name) _____ (Address)
(NA)

Date Drilled: / / Pump Intake Setting _____ ft.
Mo.Da.Yr.

Method Drilled: _____
(Air, Rot, Bored, Cable, Dug, Hyd. Rot, Jetted,
Air Percussion, Reverse Rotary, Trenching, etc.)

Lift Type: _____
(Air, Bucket, Cent, Jet, Nose, Piston, Submerg, Turb, etc.)

Hgt. of Casing above Ground _____ ft. Static Water Level _____ ft.
(From top of casing to
water level)

Drawdown _____ ft. Q at Specified Drawdown _____

Method of Measurement: _____

Static Water Level _____
(Air Line, Steel Tape, Electric Probe, etc.)

Drawdown _____
(Air Line, Steel Tape, Electric Probe, etc.)

Remarks: _____
(e.g. see addendums for chemical analysis, water usage, etc.)

#3 Bromide

Dissolved Oxygen	7.0 ppm	
PH	7.4	
P Alkalinity	0	
M Alkalinity	480 ppm	
Total Hardness	228 ppm	
Non-Carbonate Hardness	0	
Color	0	
Turbidity	0	
Manganese	0	
Bromine	.4 ppm	12.4
Sulfate	29 ppm	
Bicarbonate	586 ppm	529.5
Chlorides	2300 ppm	
Calcium Hardness	142 ppm	
Calcium	57 ppm	64.2
Magnesium	21 ppm	24.4
Carbonate	0	

UNITED STATES GOVERNMENT

Memorandum

TO : Superintendent, Platt Nat'l. Park
 Arbuckle Recreation Area

DATE: 8/15/72

FROM : Maintenance Supervisor

SUBJECT: Maintenance Costs on Springs in Platt National Park; Request for by:
 Garland Moore, SWR

From July 1971 to August 1, 1972, the following maintenance costs have been incurred.

1. Black Sulphur Springs (Beach Springs)

a. Protective cover and manhole over cistern -	3 mandays, supplies	\$125.00
b. Replace chlorinator	1 manday, item	228.00
c. Replace public service frost proof hydrant	1 manday, item	75.00

2. Medicine Spring

a. Cleaning and disinfecting cistern	2 mandays, supplies	70.00
b. Replace pump gaskets and strainers	$\frac{1}{2}$ manday, items	24.00

3. Bromide Spring

a. Cleaning and disinfecting cistern	1 manday, supplies	35.00
b. Replace chlorinator	$\frac{1}{2}$ manday, item	214.00
c. Replace drain line from Bromide Pavilion	3 mandays, supplies	150.00

4. Pavilion Springs

a. Cleaning drain line	2 mandays	60.00
b. Replace drain line	3 mandays, supplies	100.00

5. Antelope Springs

a. Cleaning of discharge channel and lagoon	3 mandays	75.00
---	-----------	-------

6. Buffalo Springs

a. Cleaning of basin and channel	3 mandays	75.00
----------------------------------	-----------	-------

7. On an annual basis, 104 mandays @ \$30. per m/day (\$3,120.), are spent in routine inspection of Springs, pumps, chlorinators, pumphouses and lines to distribution points and general upkeep of the systems.



Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

III Legal Addendum for Mineral Water Systems

None of these springs are primary sources for the stream systems in the Park, but they are essentially governed by the same set of laws (see legal addendum for stream systems). The major difference is that a beneficial use is made of the mineral waters.

In establishing the Park to protect the springs, it could be argued that the Park intended to distribute the mineral water to visitors. Therefore the U. S. reserved this water right for the Park Service even though it was not expressly mentioned in the Arbuckle legislation. If this approach is used, the Reservation Doctrine would be applied.

If the Park decided not to invoke the Reservation Doctrine, it would have three alternatives: 1) file for a permit with the state; 2) claim that the waters are merely domestic use since they are used in the homes of the visitors, (a liberal court might allow this, but the more probable interpretation is that the water is used for recreational purposes); or, 3) claim adverse possession of the waters. Here the cost outlay on the springs, as itemized in the attached memorandum would be essential.

The use of waters from the Jack Diamond Well would be analogous to the use of the flow from Vendome Well (see legal considerations re Vendome Well). The difference here is that a much smaller flow is involved and there is a closer working arrangement between the present owner and the Park. Although no formal contract was entered into, a quasi-contract may be in existence. This merely means that each party is not only acting as if a contract exists, but is also receiving some benefit or consideration from the other party. The Park gets sulphur water for its visitors. The owner gets free maintenance of his pipeline. Under this arrangement, the sulphur water need not be paid for. However, it would probably be advisable to enter into a formal agreement so that the possibility of the well owner shutting off the flow of water would be minimized.

Faucets, hydrants and drains are all used by the Public and must be maintained to USEHS Standards to protect the visitors.

The costs shown above are representative of a normal years operation and maintenance, total costs - \$4,351.00. Costs shown do not reflect the maintenance of structures housing the spring facilities.

Howard E. Crane
Howard E. Crane

8/18

Gary: Howard's Figure of
\$4351 appears a little high
in that he has 104 man-days
main. & operation, but has included
23 man-days shown above, which
~~are~~ should be in the 104.

Hope this is what you
wanted.

JCH



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Platt National Park
Arbuckle Recreation Area
P. O. Box 201
Sulphur, Oklahoma 73086

May 6, 1971

Ron Cotten
Supervisory Civil Engineer, SWRO

Dear Ron:

Enclosed please find 2 copies of recent analysis prepared by the Southern Oklahoma Skill Center laboratory. Bert Mitchell, U.S.P.H.S. suggested this during his last visit. These are posted in Pavilion Springs pavilion, and in the Bromide pavilion on large routed signs. I cannot determine when the previous analysis was made or when the signs were made. There are some variations and we plan to rework the signs as time allows. Would you please forward the second set to Bert Mitchell? The #3 Sulphur is the line to Bromide Pavilion from the "Jack Diamond" artesian well. He was especially interested in this one due to the taste.

I have also enclosed sheets on two proposed seal and chip contracts that, after analyzing our April ADP sheets it appears we can finance from 1971 FY operating funds. If you agree to the need for these could you send them to Bob Bone for contract preparation. A suggested bidders list is also enclosed.

Sincerely

Howard E. Crane
Howard E. Crane
Maintenance Supervisor
Platt-Arbuckle

April 23, 1971

#3 Sulphur

PH	7.1
DO	0
P Alkalinity	0
M Alkalinity	304 ppm
Total Hardness	404 ppm
Calcium Hardness	240 ppm
Bicarbonate	371 ppm
Calcium	96 ppm
Magnesium	40 ppm
Carbonates	0
Chlorides	909 ppm
Color	0
Turbidity	0
Manganese	1.9 ppm
Sulfate	22 ppm
Non-Carbonate Hardness	100 ppm

PHOTOGRAPHIC ADDENDUM FOR PLATT NATIONAL PARK



BROMIDE SPRINGS

PHOTOGRAPHIC ADDENDUM FOR PLATT NATIONAL PARK



BROMIDE PAVILION

PHOTOGRAPHIC ADDENDUM FOR PLATT NATIONAL PARK



BROMIDE PAVILION

PHOTOGRAPHIC ADDENDUM FOR PLATT NATIONAL PARK



PUMP HOUSE FOR
BROMIDE & MEDICINE SPRINGS

OKLAHOMA STATE DEPARTMENT OF HEALTH
ENGINEERING LABORATORY

REPORT OF WATER ANALYSIS

SAMPLE City Water ENGINEERING LABORATORY NUMBER 857
 (a)
 SOURCE OF SAMPLE Bronide Pavilion DATE TAKEN 10-1-63
 CITY Edmond DATE RECEIVED 10-3-63
 COUNTY _____ DATE COMPLETED 10-15-63
 PUBLIC _____ PRIVATE _____

RESULTS REPORTED IN PARTS PER MILLION

CONSTITUENT	PPM	CONSTITUENT	PPM
SILICA (SiO ₂)		IRON (Fe)	0
CALCIUM (Ca)	70	MANGANESE (Mn)	0
MAGNESIUM (Mg)	36	SULFATE (SO ₄)	7
SODIUM (Na)		SPECIFIC CONDUCTANCE (Microhms)	
POTASSIUM (K)		DISSOLVED SOLIDS	550
BICARBONATE (HCO ₃)	390	TOTAL HARDNESS (CaCO ₃)	324
CARBONATE (CO ₃)	2	CALCIUM HARDNESS (CaCO ₃)	176
CHLORIDE (Cl)	14	NON-CARBONATE HARDNESS (CaCO ₃)	4
FLUORIDE (F)	0.20	"P" ALKALINITY (CaCO ₃)	0
NITRATE (N)	0.05	TOTAL ALKALINITY (CaCO ₃)	320
AMMONIA (N)	0.50	COLOR	0
		TURBIDITY (SiO ₂)	1
DISSOLVED OXYGEN			
BIOCHEMICAL OXYGEN DEMAND		pH	7.3

REMARKS _____

ANALYST John Thompson

COMPOSITION OF SPRING AND WELL WATER
IN

PLATT NATIONAL PARK

Halides Wt. % of total Sam.	1 Buffalo Springs	2 Antelope Springs	3 Sulphur Pool	4 Black Sulphur	5 Pavillion Springs	6 Sulphur Springs	7 Bromide Springs	8 Medicine Springs
Chloride	0.0050	0.0099	0.0534	----	0.0155	0.0876	0.2270	0.2170
Bromide	0.0000	0.0000	0.0030	-----	0.0000	0.0000	0.0120	0.0120
Iodide	0.0000	0.0000	0.0000	-----	0.0039	0.0010	0.0010	0.0010
Total Halides	0.0050	0.0099	0.0564	0.0003	0.0194	0.0886	0.2400	0.2300
PPM Halides	50	99	564	3	194	886	2400	2300
Metals Wt. % of residue								
Calcium	23.50	15.51	2.51	31.30	4.15	1.51	7.01	3.52
Iron	0.15	0.09	0.14	0.30	0.16	0.09	0.12	0.12
Titanium	Tr.	Tr.	Tr.	Tr.	Tr.	---	---	Tr.
Copper	0.065	0.095	0.100	0.105	0.064	0.050	0.062	0.065
Chromium	0.024	0.021	0.022	0.028	0.037	0.018	0.017	0.011
Zinc	Tr.	---	---	Tr.	---	Tr.	Tr.	Tr.
Nickel	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.
Strontium	0.071	0.055	0.445	0.000	0.126	0.365	0.040	0.040
Barium	Tr.	Tr.	Tr.		Tr.	---	Tr.	Tr.

Metals(cont.)								
Wt. % of residue	1	2	3	4	5	6	7	8
Silicon	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.
Total Sulphur	0.00	0.00	0.19	0.19	0.12	0.32	0.19	---
Potassium	0.36	0.63	1.38	0.44	0.67	1.14	0.63	0.17

U. S. ANALYSIS - BROMIDE SPRING

Ingredients (b) Pts. per Million		Carbon Dioxide (A)	114.0
Ferric Oxide	8.0	CO ₂ in normal Carbonates	277.0
Calcium	60.8	CO ₂ in Sulphates	42.1
Magnesium	20.0	Chlorine	1986.0
Sodium	1700.00	Bromine	12.4
Potassium	6.0	(a) Excess of CO representing	
Lithium	Trace	bicarbonates.	
Silica	29.6	(b) No iodine or sulphites	

U. S. ANALYSIS - SODIUM CHLORIDE SPRING (BROMIDE #2)

Ions	milligrams per liter	Hydrogen sulphide (H ₂ S)	7.2
Silica (SiO ₂)	10.0	Hypothetical combinations	
Sulphuric acid (SO ₄)	172.6	milligrams per liter	
Bicarbonic acid (HCO ₃)	529.5	Potassium chlorid (KCl)	21.3
Nitric acid (HNO ₃)	0.0	Potassium bromid (KBr)	8.6
Chlorin (Cl)	1976.0	Sodium chlorid (NaCl)	3224.6
Bromin (Br)	5.8	Sodium sulphid (Na ₂ SO ₄)	255.2
Iron (Fe)	0.0	Sodium bicarbonate	
Calcium (Ca)	64.2	(NaHCO ₃)	291.3
Magnesium (Mg)	24.4	Magnesium bicarbonate	
Potassium (K)	14.0	(Mg(HCO ₃) ₂)	146.6
Sodium (Na)	1421.0	Calcium bicarbonate	
Lithium (Li) (spectro-		(Ca(HCO ₃) ₂)	259.7
scopic trace)	0.0	Silica (SiO ₂)	10.0
TOTAL	4217.5	TOTAL	4217.5

U. S. ANALYSIS - MEDICINE SPRING

Ions	(Pts. Per Million)	Potassium iodid (KI)	0.18
Silica (SiO ₂)	16.80	Sodium sulphohydrate (NaBS)	8.76
Sulphuric acid (SO ₄)	14.63	Sodium chlorid (NaCl)	3958.10
Sulphohydrate (HS)	5.15	Sodium sulphate	
Bicarbonic acid		Na ₂ SO ₄	21.63
(HCO ₃)	572.71	Sodium bicarbonate	
Nitric acid (HNO ₃)	0.00	(NaHCO ₃)	364.99
Nitrous acid (HNO ₂)	0.00	Magnesium bicarbonate	
Chlorin (Cl)	2412.00	(Mg(HCO ₃) ₂)	188.94
Bromin (Br)	0.20	Calcium bicarbonate	
Iodin (I)	0.14	(Ca(HCO ₃) ₂)	199.43
Iron (Fe)	#	Silica (SiO ₂)	16.80
Calcium (Ca)	49.32	TOTAL	4782.51
Magnesium (Mg)	31.40	#Iron sulphid	
Potassium (K)	12.40	precipitate (FeS)	1.90
Sodium (Na)	1667.76	Hydrogen sulphid at 0	
	4782.51	degrees and 76 Omm,	
Hypothetical combination		in 1 litre.	4.8 G.C.
Potassium Chlorid (KCl)	23.38		
Potassium Bromid (KBr)	6.30		

TABLE 4

Bromide Spring Chemical and Physical Water Quality

<u>Parameter</u>	<u>Values</u>		
	<u>Maximum</u>	<u>Average</u>	<u>Minimum</u>
pH	7.8	7.6	7.4
Dissolved Oxygen (DO), mg/l	7.6	5.8	4.6
5 Day (20°C) BOD, mg/l	3.0	1.0	0.0
Total Suspended Solids, mg/l	32	-	<7.0
Total Solids, mg/l	4,697	4,527	4,406
Organic Nitrogen as (N), mg/l	0.6	-	<0.05
Ammonia Nitrogen as (N), mg/l	0.3	-	<0.05
Nitrate Nitrogen as (N), mg/l	1.2	1.0	0.8
Nitrite Nitrogen as (N), mg/l	.075	-	< .005
Total Phosphate as (P), µg/l	45	-	<10
Bromide, mg/l	4.8	4.4	4.0
Chloride, mg/l	2,360	2,300	2,240
Hardness as (CaCO ₃), mg/l	270	244	213
(Micromhos/ Conductivity in cm at 25°C)	8,230	7,510	6,220
Sulfide	.6	.3	0.0
Phenol			
Sulfite			
Chemical Oxygen Demand, mg/l	324	112	29

OKLAHOMA STATE DEPARTMENT OF HEALTH
ENGINEERING LABORATORY

REPORT OF WATER ANALYSIS

SAMPLE Browns Spring ENGINEERING LABORATORY NUMBER 854
 SOURCE OF SAMPLE Platt National Park DATE TAKEN 10-1-63
 CITY Sulphur DATE RECEIVED 10-3-63
 COUNTY Murray DATE COMPLETED 10-15-63
 PUBLIC X PRIVATE

RESULTS REPORTED IN PARTS PER MILLION

CONSTITUENT	PPM	CONSTITUENT	PPM
SILICA (SiO ₂)		IRON (Fe)	0
CALCIUM (Ca)	42	MANGANESE (Mn)	0
MAGNESIUM (Mg)	28	SULFATE (SO ₄)	40
SODIUM (Na)		SPECIFIC CONDUCTANCE (Microhms)	
POTASSIUM (K)		DISSOLVED SOLIDS	4340
BICARBONATE (HCO ₃)	530	TOTAL HARDNESS (CaCO ₃)	232
CARBONATE (CO ₃)		CALCIUM HARDNESS (CaCO ₃)	116
CHLORIDE (Cl)	2044	NON-CARBONATE HARDNESS (CaCO ₃)	
FLUORIDE (F)	1.0	"P" ALKALINITY (CaCO ₃)	0
NITRATE (N)	0.8	TOTAL ALKALINITY (CaCO ₃)	472
AMMONIA (N)	0.35	COLOR	
		TURBIDITY (SiO ₂)	1
DISSOLVED OXYGEN			
BIOCHEMICAL OXYGEN DEMAND		pH	6.9

REMARKS ANALYST John Thompson

Region Three
Santa Fe, New Mexico

~~D5031~~ L1425
X-L54

4/30/62

Handwritten:
Diamond
4/30/62
WRD

Memorandum

To: Superintendent, Platt National Park
From: Regional Director
Subject: Proposed Acquisition, Sulphur Water Supply, Jack Diamond Well, Platt National Park

When you were in the Regional Office you discussed with Mr. Kell and others the possibility of acquisition of the Jack Diamond well which furnishes sulphur water for the Bromide Pavilion at Platt National Park.

It is our understanding that we have been using this water supply for several years and so far as we know without any formal agreement with Mr. Diamond.

There is enclosed a draft of a proposed memorandum to the Director on this subject. There is also enclosed a letter-size print, NP-PLA 7103 showing according to the best information available the approximate location of the Jack Diamond well and the two-inch pipe which conveys water from that well to the fountain and the Bromide Pavilion.

Will you review the print and the proposed draft and make any suggestions, additions, or corrections that you think should be included in our proposed memorandum to the Director.

Since our records are meager we especially need your help in checking the accuracy of the statements in the proposed draft. After you have reviewed the yellow draft please return one marked copy to this office.

Thomas J. Allen
Regional Director

Enclosures

JEKell:ew 4/30/62

Bromide
Springs WRB

Platt National Park
Sulphur, Oklahoma

L54

April 27, 1962

Memorandum

To: Regional Director
From: Superintendent, Platt
Subject: Offer for Sale - Jack Diamond Well

This memorandum is to inform you that the subject well, which supplies the fountain at the 12th Street Entrance to the park and the drinking fountains in the Bromide Springs Pavilion, has been offered for sale to the National Park Service by Mr. Diamond through his lawyer Judge John C. Powell of Sulphur, Oklahoma.

The price quoted for the well is \$5,000. It has occurred to us that perhaps Mr. Wohlbrandt should be prepared to consider this offer on the grounds on his planned trip to Platt within the next few weeks.

It should be kept in mind that this quotation has been made by Mr. Diamond at the request of the National Park Service, and there is certainly nothing to indicate that the National Park Service, whereby water is furnished to our system from this well without cost, is in any way unsatisfactory to him. However, the Public Health Service thinks we should own title to the well to give us a free hand in its development and a warranty to its continued use.

Johnwill Paris
Superintendent

In duplicate

JAS:stephens:JF/jas

ANALYTICAL REPORT

To M. C. Powers

Report Number 5975

Date February 17, 1959

Book Number 942

Eight water samples as designated

Sample	Iodide, % (Gravimetric)	Bromide, % (Gravimetric)	Chloride, % (Gravimetric)	Total Halide, calculated as Chloride, mg/kg $\rightarrow$ in ppm (Titrimetric)
1.	0.000	0.012	0.005	-125
9-2-5.	0.0039	0.000	¹⁵⁵ 0.0155	-194
3.	0.000	0.003	⁵³⁴ 0.0534	-557
4.	*	*	*	2.9 2.9
5.	¹⁰ 0.001	¹²⁰ 0.0120	²²⁷⁰ 0.2270	-2400
6.	0.001	0.000	⁸⁹⁶ 0.0876	-896
7. 1?	¹⁰ 0.001	¹²⁰ 0.012	²¹⁷⁰ 0.2170	-2300
5-2?	0.000	0.000	⁷⁹ 0.0099	-79

*Method inapplicable.

Bromel Hill
S S

[illegible]

SCALE FACTORS

ADP 1-18

WE.

PNP

DATE

2-17-59

PROBLEM

Medicine Sprs.

?

Bromine Sprs.

Sulfur Sprs.

#5

6

7

(water)
8 W R L

ELEMENTS	PK.HGT ADP	PK.HGT LiF	WT. %	PK.HGT ADP	PK.HGT LiF	WT. %	PK.HGT ADP	PK.HGT LiF	WT. %	PK.HGT ADP	PK.HGT LiF	WT. %
Li 3												
Be 4												
B 5												
Na 11												
Mg 12												
Al 13												
Si 14	2			2			3			4		
P 15												
S 16	3		0.19	5		0.32				4		0.25
Cl 17												
K 19	26		0.63	47		1.14	7		0.17	26		1.62
Ca 20												
Sc 21												
Ti 22												
V 23												
Cr 24												
Mn 25												
Fe 26												
Co 27												
Ni 28												
Cu 29												
Zn 30												
Ga 31												
Ge 32												
As 33												
Se 34												
Br 35												
Rb 37												
Sr 38												
Y 39												
Zr 40												
Mo 42												
Pd 46												
Ag 47												
Cd 48												
In 49												
Sn 50												
Sb 51												
I 53												
Cs 55												
Ba 56												
La 57												
Ce 58												
Pr 59												
Nd 60												
Pm 61												
Sm 62												
Eu 63												
Gd 64												
Tb 65												

S₀₄, S, (H₂S)

WEL.

DATE _____

PROBLEM

[illegible]

WATER SYSTEM INVENTORY

PARK Platt National Park AREA WITHIN PARK Bromide Springs

WATER SUPPLY SOURCE: WELL _____ SPRING Bromide TRIBUTARY TO Rock Creek

STREAM _____ TRIBUTARY TO _____ OTHER _____

LOCATION: SEC. SW 1/4 of Sec. 3 T. 1-S R. 3-E M. Indian Base Line
(to nearest 10 acres)

IF LAND UNSURVEYED PROVIDE PROJECTION OF SEC. _____ T. _____ R. _____ M. _____

WHEN CONSTRUCTED Pavilion - WHAT EXISTING FACILITIES ARE SERVED: (a) CAMPGROUND None
(no. of sites)

(b) PICNIC AREA None (c) CONCESSIONER None (d) COMFORT STATIONS None
(no. of sites)

(e) RESIDENCES None (f) IRRIGATION None
(no. of acres and legal location to nearest 10 acres)

Pavilion, 1 fountain

(g) OTHERS & 1 hydrant YEARLY WATER USE (in gallons) 0,500 AND 5,500
MAY TO OCTOBER OCTOBER TO MAY

REQUIREMENTS ON DAY OF GREATEST USE IN GALLONS 125 CAPACITY OF THE SOURCE (gallons per day) 270

Platt NATIONAL PARK SERVICE DRAWING THAT APPLIES TO THIS WATER SYSTEM AND SOURCE: No. 5315-B

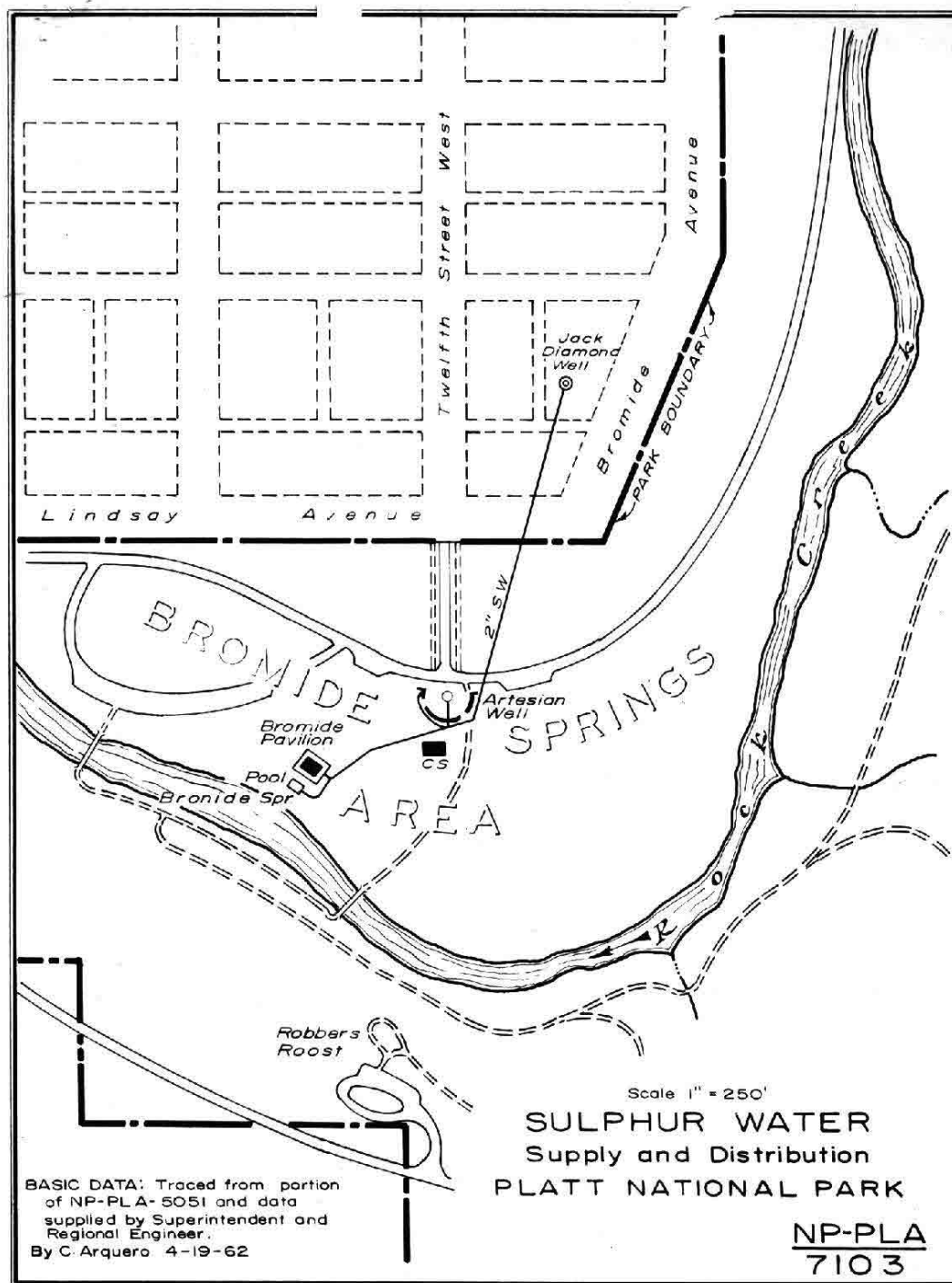
DTD _____ TITLE _____ MASTER PLAN: No. 2100 DTD _____

TITLE _____

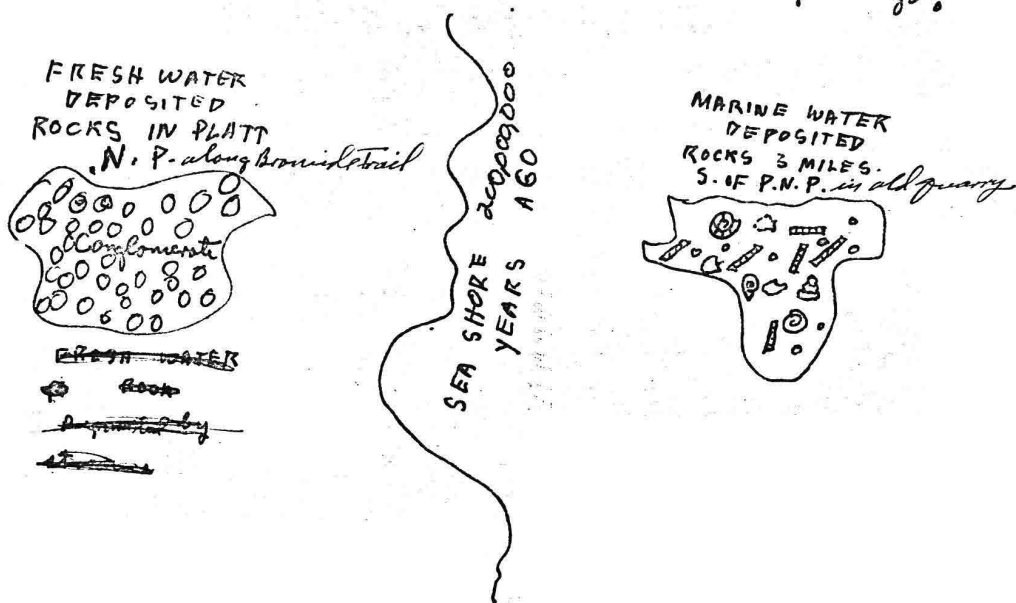
Private containers are filled and removed from the Park.

notes from Gould & Schoff - 1939 -

- 1) They think the mineral (bromide + medicine) springs have same origin as the sulphur springs.
- 2) There are no analyses of the sulphur springs - only the medicine + bromide.
 → Gould (1939) gives short anal. of BIG TOM as Cl⁻ 452, Na 269, Ca 96, Mg 35, K 24 PPB.
 mineral spg. have about 2,000 PPB Cl⁻.
- 3) They say sulphur springs flow only 5 as much ~~as~~ in 1939 as in 1906!! i.e., less intake of H₂O there is being taken out by wells + springs.
- 4) They say:
 - A. fresh water from Fortotoc
 - B. mineral (all) water from Simpson.
- 5) They do not explain in detail the antelope, Buffalo, + other fresh H₂O springs as naturally where water table hits surface.
- 6) They do not mention mixing of ~~the~~ H₂O Swai with the brine.
- 7) They relate fluctuations of springs to rain fall - especially fresh water springs.
- 8) They say in course of time both springs + wells will cease.



these rocks were deposited ("formed")
 SOUTH →
 at the same time - 230,000,000 years ago!



Docket Information

Number of Documents in Docket 47

Documents Dated from 2/13/1959 to 9/11/1995

Docket Compiled: 2/3/2011